DAVID VILELA

PHD INDUSTRIAL ENGINEER RESEARCHER & DEVELOPER

I'm an industrial engineer PhD with eight years of research experience in the mechanical engineering branch, more precisely in implementation of multibody simulators applied to virtual reality, vehicle simulation, mechanisms and machinery.

I have worked with C/C++, Fortran, Python, Matlab/Octave and LabView on the development of real-time vehicle models for hardware-in-the-loop platforms like Texas Instruments PXI. I've been developing mostly under GNU/Linux, where I am the most comfortable, but I spent my two first research years in Windows and I have also developed under Mac OS for a few months. I usually fiddle with Raspberry Pis, and from time to time also with Arduinos, ESP32, ESP8266 and MSP430. I've also developed some small home projects using Python, Bash, JavaScript/Node, Django, REST, Websockets, SQLite, HTML/CSS and Qt among others.

My PhD thesis was focused on contact models and collision detection for virtual assembly, including a stay at the Computer Graphics and Virtual Reality Group from the University of Bremen, which is specialized on computer graphics, artificial vision, virtual reality and natural user interfaces. I've also developed haptic interface hardware using KiCad and its corresponding control software.

I've teached Solid Works and Solid Edge in the Computer Assisted Design subject at the University of A Coruña for four years. I have also regularly worked with Blender, and I know some AutoCad, Inkscape and Gimp.

I am particularly interested in new technologies, especially machine learning/AI and blockchain/defi, where I am currently developing some personal projects and enrrolled in online courses. I consider myself an enthusiast of science and divulgation, the aerospatial industry, physics and mathematics, music, design, LEGO blocks and I'm fascinated by the human brain and how things work, as well as explaining and teaching them.

CONTACT

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EXPERIENCE

2020 - Present	**CTAG, Automobile Technological Center of Galicia**	Machine Learning Platform Engineer
2019 - 2020	**Mechanical Engineering Laboratory, UDC**	Research support technician
2014 - 2018	**Mechanical Engineering Laboratory, UDC**	FPI Predoctoral Researcher and PhD Teaching Assistant
2017	**Computer Graphics Group, University of Bremen**	PhD student on international stay
2012 - 2014	**Mechanical Engineering Laboratory, UDC**	Research assistant
2011	**Department for Urban Planning, Town Hall, Cedeira**	Internship student
2007	**Civil Protection, Cedeira**	Stage assembly, light and sound installations and security staff

EDUCATION

2014 - 2018	**PhD in Industrial Engineering**	*University of A Coruña*
2012 - 2013	**Industrial Engineering Research Master's Degree**	*University of A Coruña*
2003 - 2011	**Industrial Engineering Master's Degree**	*University of A Coruña*

COURSES AND ACTIVITIES

2014	**C1 Certificate in Advanced English**	*Cambridge School*	
2013	**Introduction to Python**	*University of A Coruña*	20 hours
2011	**Introduction to Artificial Intelligence**	*Stanford University*	8 weeks (online)
	Introduction to Machine Learning	*Stanford University*	8 weeks (online)
	Child Education and Support Volunteering	*Nepal Sonríe NGO*	3 weeks
2008	**Welding**	*Navantia Ferrol*	20 hours
2004	**C programming**		50 hours
2003	**Coastal Skipper**	*Nautical and Fishing School, Ferrol*	
2002	**Basic and Intermediate English**	*Official School of Languages, Cedeira*	4 years
2001	**AutoCad**		30 hours

SKILLS

Development	C++, C, Python, Fortran, Matlab/Octave, Labview, HTML/CSS, GNU/Linux, Git, Bash, Qt5, OpenSceneGraph. Currently learning TensorFlow, JavaScript and Node.js.
Design and edition	Solid Edge, Solid Works, Blender, AutoCad, Inkscape, Gimp, Latex
Languages	English, Spanish, Galician
Artistic & Other	Guitar, Driving License